

33. (New) The network switch of claim 1 wherein each of the plurality of interface cards further comprises a plurality of buffers coupled with each of the other interface cards.

34. (New) The interface card of claim 6 wherein the plurality of buffers in the backplane interface comprise a queue corresponding to each remote card to which the interface card is to be coupled.

#### REMARKS

Applicants respectfully request reconsideration of the present U.S. Patent application as amended herein. Claims 1, 6, 11 and 16 have been amended. Claims 33 and 34 has been added No claims have been canceled. Thus, claims 1, 3-6, 8-11 and 13-34 are pending.

#### Claim Rejections - 35 U.S.C. § 112, first paragraph

**Claims 1, 3-6, 8-11 and 13-32** were rejected as containing subject matter that was not described in the specification in such a way as to enable one skilled in the art to which it pertains to make and/or use the invention. Specifically, the specification allegedly:

fails to disclose how the two different types of traffic are received and ***processed differently***.

See Office Action at page 2, comment 2 (emphasis added).

***Applicants submit that whether or not the specification discloses how the two types of traffic are received and processed differently is irrelevant.*** The rejected claims do not currently include a limitation as to different types of traffic being received and

processed differently. Therefore, the rejection under 35 U.S.C. § 112, first paragraph is moot. Applicants submit that the claims fully supported and enabled as required by 35 U.S.C. § 112, first paragraph. Figure 1, for example, provides an overview of the data flow between the communication line and the backplane.

A review of paragraph 0008 may be helpful:

...the channels that carry network traffic to the interface cards are pre-configured as either TDM channels or network channels.

See page 4. Applicants submit that receiving line signals that transmit data according to known protocols at an interface is known in the art as demonstrated by the prior art of record. Based on the foregoing, Applicants request that the rejection under 35 U.S.C. § 112, first paragraph be withdrawn.

Claim Rejections - 35 U.S.C. § 103(a)

**Claims 1, 3-5, 11, 13-20 and 23** were rejected as being unpatentable over U.S. Patent No. 6,266,341 issued to Suprenant, et al. (*Suprenant*) in view of U.S. Patent No. 6,226,287 issued to Brady (*Brady*).

Claim 1 recites:

a plurality of interface cards coupled to the backplane, the interface cards coupled to receive multiple channels of network traffic from external sources, the plurality of interface cards to receive one or more channels of data according to a time division multiplexed (TDM) protocol and one or more channels of data according to a second protocol, the interface cards to route the channels of data over the backplane using a single format to one or more predetermined interface cards.

Thus, Applicants claim transmitting data received according to multiple protocols over a backplane using a single format.

*Surprenant* discloses bridging traffic according to multiple protocols. See Abstract. However, *Surprenant* discloses a separate bus for each protocol type.

Specifically, *Surprenant* discloses

...communications system 50 includes at least three (3) separate types of busses, e.g., TDM bus 78, packet bus 80A (or 80B), etc., and control bus 92, etc.

See col. 10, lines 10-14. Therefore, *Surprenant* teaches away from the invention as claimed in claim 1.

*Brady* is cited to teach receiving multiple protocols on a single card. However, *Brady* does not teach or suggest transmitting data received according to multiple protocols over a backplane using a single format. Therefore, *Brady* does not cure the deficiencies of *Surprenant* and no combination of *Surprenant* and *Brady* can teach or suggest the invention as claimed in claim 1.

Claims 3-5, 20 and 23 depend from claim 1. Because dependent claims include the limitations of the claims from which they depend, Applicants submit that claims 3-5, 20 and 23 are not rendered obvious by *Surprenant* and *Brady* for at least the reasons set forth above.

*DeNap* is cited to teach use of a single format for transmission of voice and data. *DeNap* discloses techniques for providing telephony services over an ATM network. See Abstract. However, because *Surprenant* discloses separate buses and multiple formats, there is no motivation to combine *DeNap* with *Surprenant*. Therefore, at least one of the elements of the claims are lacking the remaining references.

Claim 11 recites:

receiving multiple channels of network traffic from external sources via a network interface of an interface card, wherein the multiple channels of network traffic to include one or more channels of data

according to a time division multiplexed (TDM) protocol and one or more channels of data according to a second protocol;

converting the TDM data and the second protocol data to a predetermined format; and

routing the channels of data in the predetermined format via a backplane connection to one or more predetermined destinations.

Claim 16 recites similar limitations.

As mentioned above, the cited references cannot be combined to teach or suggest transmitting data received according to multiple protocols over a backplane using a single format. Therefore, no combination of the cited references can teach or suggest the invention as claimed in claim 11.

Claims 13-15 depend from claim 11. Claims 17-19 depend from claim 16.

Because dependent claims include the limitations of the claims from which they depend, no combination of the cited references can teach or suggest the invention as claimed in claims 13-15 and 17-19.

**Claims 6, 8-10 and 26** were rejected as being unpatentable over *Surprenant* in view of *Brady* and further in view of U.S. Patent No. 5,953,329 issued to Degges, et al. (*Degges*).

Claim 6 recites:

a backplane interface to transmit and receive data over a backplane using a predetermined format;

a network interface to transmit and receive multiple channels of network traffic from external sources, the multiple channels of network traffic to include one or more channels of data according to a time division multiplexed (TDM) protocol and one or more channels of data according to a second protocol;

conversion circuitry to convert the TDM data and the second protocol data to the predetermined format; and

a time slot management circuit coupled between the backplane interface and the network interface, the time slot management circuit to route the channels of data over the backplane to one or more predetermined destinations.

Thus, Applicants claim a circuit that converts TDM data and other protocol data to a predetermined format for transmission over a backplane.

As mentioned above, the cited references cannot be combined to teach or suggest transmitting data received according to multiple protocols over a backplane using a single format. Therefore, no combination of the cited references can teach or suggest the invention as claimed in claim 6.

Claims 8-10, 26 and new claim 34 depend from claim 6. Because dependent claims include the limitations of the claims from which they depend, Applicants submit that claims 8-10, 26 and 34 are not rendered obvious by *Surprenant*, *Brady* and *Degges* for at least the reasons set forth above.

**Claims 21, 22, 24, 25, 29, 31 and 32** were rejected as being unpatentable over *Suprenant* in view of *Brady* and further in view of U.S. Patent No. 6,407,997 issued to DeNap, et al. (*DeNap*). Claims 21, 22, 24, 25 and 29 depend from claim 1. Claim 31 depends from claim 11 and claim 32 depends from claim 16. *DeNap* is cited to teach used of optical signals. However, as discussed above, *DeNap* does not cure the deficiencies of *Suprenant* and *Brady*. Therefore, no combination of *Suprenant*, *Brady* and *DeNap* teaches or suggests the invention as claimed in claims 21, 22, 24, 25, 29, 31 and 32.

**Claims 27, 28 and 30** were rejected as being unpatentable over *Surprenant* in view of *Brady* and further in view of *Degges* and *DeNap*. Claims 27, 28 and 30 depend from claim 6. *Degges* is cited to teach use of an internal cell format.

*Degges* discloses a switching matrix for T1 frames. See col. 4, lines 5-10.

*Degges* discloses use of only T1 frames. Therefore, *Degges* does not teach or suggest

conversion of TDM data and second protocol data to an internal cell format. *DeNap* is cited to teach use of optical signals. T1 frames can be carried as optical signals.

Therefore, no combination of *Surprenant*, *Brady*, *Degges* and *DeNap* teaches or suggests the invention as claimed in claims 27, 28 and 30.

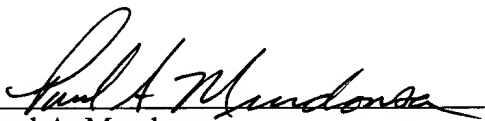
#### Conclusion

For at least the foregoing reasons, Applicants submit that the rejections have been overcome. Therefore, claims 1, 3-6, 8-11 and 13-34 are in condition for allowance and such action is earnestly solicited. The Examiner is respectfully requested to contact the undersigned by telephone if such contact would further the examination of the present application.

Please charge any shortages and credit any overcharges to our Deposit Account number 02-2666.

Respectfully submitted,  
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Application No. 097872,146  
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MARKED VERSION OF THE AMENDED CLAIMS

1. (Twice Amended) A network switch comprising:

a backplane; and

a plurality of interface cards coupled to the backplane [via an interface], the interface cards coupled to receive multiple channels of network traffic from external sources, the plurality of interface cards to receive one or more channels of data according to a time division multiplexed (TDM) protocol and one or more channels of data according to a second protocol, the interface cards to route the channels of data over the backplane using a single format to one or more predetermined interface cards.

6. (Twice Amended) An interface card [for use in a network switch, the interface card] comprising:

a backplane interface to transmit and receive data over a backplane using a predetermined format;

a network interface to transmit and receive multiple channels of network traffic from external sources, the multiple channels of network traffic to include one or more channels of data according to a time division multiplexed (TDM) protocol and one or more channels of data according to a second protocol;

conversion circuitry to convert the TDM data and the second protocol data to the predetermined format; and

a time slot management circuit coupled between the backplane interface and the network interface, the time slot management circuit to route the channels of data over the backplane to one or more predetermined destinations.

11. (Twice Amended) A method comprising:

receiving multiple channels of network traffic from external sources via a network interface of an interface card, wherein the multiple channels of network traffic to include one or more channels of data according to a time division multiplexed (TDM) protocol and one or more channels of data according to a second protocol;

converting the TDM data and the second protocol data to a predetermined format;

and

routing the channels of data in the predetermined format via a backplane connection to one or more predetermined destinations.

16. (Amended) An apparatus comprising:

means for receiving multiple channels of network traffic from external sources via a network interface of an interface card, wherein the multiple channels of network traffic to include one or more channels of data according to a time division multiplexed (TDM) protocol and one or more channels of data according to a second protocol;

means for converting the TDM data and the second protocol data to a predetermined format; and

means for routing the channels of data in the predetermined format via a backplane connection to one or more predetermined destinations.